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## No. XII.

## IMPROVED LIFE-BUOY.

*The* GOLD ISIS MEDAL *was presented to Commander* BEADON, *R.N., of Hope Corner, near Taunton, for his Improved Life-Buoy, a Model of which has been placed in the Society's Repository.*

*Taunton, Somerset,*
Sir, *October* 20, 1842.

I HAVE the honour to send for the approval of the Society of Arts the original rough linear drawings of my movable life-buoy, representing a longitudinal and transverse section of it, and beg to observe that I have lodged a caveat at the Patent Office in the early part of this year, but as it is not my intention to prosecute the patent, I lose no time in specifying the particulars of my invention to the Society, to prevent other parties from monopolising the right of manufacture.

I beg particularly to call the attention of the Society to my method of dividing the cylinder into compartments by interior cases or drums, whereby it is considerably strengthened and rendered more secure from filling with water. These drums described in the figure by the letter z are water-tight vessels, distinct and separate from the outer cylinder, but fitting it nicely, so as to support the outer cylinder on the outside from any external pressure or blow.

This method I conceive to be of great advantage in the construction of all buoys and water-marks whatsoever, and likely to be highly beneficial to the nautical world.

The movable life-buoy is suspended across the ship's stern, under the taffrail, in the usual way, and is fitted with light staff and fuze. The great objection to other buoys is, that they drift from a man almost as fast as he can swim; also, that they are deficient of any method whereby a man can regain the ship after he has got on the buoy. Numerous instances are afforded where a man has been left on the buoy to his fate, from the impossibility to lower a boat in bad weather, when the sea has been running high, and many boats' crews have been lost in the attempt to save men on the life-buoys now in use in the royal navy, as instanced in the case of the Melville, bearing the flag of Sir John Gore in 1832, off the Cape of Good Hope.

I take the liberty to explain to you, sir, for the information of the Society, that a ship can be rendered nearly stationary, in a more or less degree, according to the wind, tide, sea, &c., and that a life-buoy, when disengaged from the ship, is influenced by the same causes; but as a ship offers greater resistance to the wind by her lofty spars or gear, it follows that she drifts faster than the man and buoy, consequently the distance between them continually increases, until the buoy is lost sight of. I can refer you to several eye-witnesses of such heart-rending and agonising spectacles.

You will observe that the drift of my buoy is materially prevented by its deep keel, which is caused to drift obliquely, or to present its broadside to the wind, being caused so to do by the influence of the wind on the light staff.

I conceive that a man can return to the ship by the means described in the drawing; and I further believe that it will be found of great value in taking a line on shore in case of shipwreck. In short, it is a portable life-boat, calculated for use when other boats cannot live, or have been destroyed for use in action or by the violence of the weather.

I have the honour to be, Sir, &c. &c.

*To the Secretary of the Society of Arts.*

George Beadon,
Commander.

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Sir,

22*d February*, 1843.

I beg to send an improved model of my life-buoy for the inspection of the Society at their meeting this evening. You will observe that it has a different arrangement for the light-box, which is kept close up in its cover by a spiral spring, thereby keeping the fuze dry, and at the same time affording facility in suspending the buoy, and obviating the objection to the present mode of inspecting the fuze, which is done by a sliding cover from above, and, unless carefully stopped, must admit water; whereas, by compressing the spring by the way I propose, the fuze will be seen. You will further observe, that two oars instead of one are here applied, and the man will face in the direction he intends to move. Also a man has here the means of securing himself by passing the eye of two ropes over a hook, securing himself thereby. Thus, if it be necessary to send a seaman to the shore, or as far as the surf, with a line from a stranded ship, it will be next to impossible for him to be washed off whilst he has a firm hold with both hands and knees, besides the support of the ropes on each side of him.

It will be easily seen that a great many modifications in the mechanical arrangement of my proposed means of this apparatus can be effected. There is nothing in the construction thereof which a ship's artificer cannot make on board. For instance, the eyebolts in the extremities might be formed of thimbles seized in a grummet passing round the buoy. The oars are easily attached (by any seaman) by rope with or without thimbles. Moreover, larger buoys, having more seats and oars, or outriggers with shapes, also more adapted for speed, according to the purpose required, can be formed.

Having had the misfortune, together with twenty others, to have been upwards of fourteen hours in the water off the island of Lintin, during a tempestuous night and part of the following day, in April 1841, I will state, for the benefit of others, the great advantage to be derived from exertion when in the water. The vessel having foundered at her anchors, left us clinging to her starboard gunwale, but wholly in the water. The oars and different articles occasionally floated up, and drove against us with great violence. As the vessel became less buoyant every moment, I supposed confined air kept her up, and that she would founder entirely as it escaped. I could not induce any of the men, except Robert Smalls, ordinary seaman, and Thomas Allen, a youth, both of Her Majesty's ship Conway, to assist me in lashing spars together sufficiently large to support (as it eventually did) six, including Smalls and myself, for several hours; the other four could not swim. The vessel's mast having taken the ground, she was suddenly swept completely under by the tide. For a time all were swimming for their lives, but, providentially, the ballast fell out, and the vessel appeared bottom up, well out of the water. We on the spars drifted miles away from the vessel, her mast, I suppose, having taken the bottom.

I must here mention the conduct of Mr. Edward Turnour, mate, who, at my request, nobly swam to the rudder, then floating at a distance, rather than jeopardise the remainder; this I state to shew that it was not a lack of fortitude which overpowered the men, but a mistaken view of saving their strength as they answered my orders, and, throughout this trying scene, by begging me to save my strength. By using a floating plank which floated by, as a paddle, we actually paddled back to our comrades on the vessel's bottom on the return tide. Suffice it to say, when picked up I was never better, and, excepting Allen and Smalls, the others, including some powerful men, were as exhausted and helpless as infants, from cold and cramp.

A ray of hope stimulates exertion, I therefore think that every ship should have such an apparatus, and I am confident, in many late instances of shipwreck, much loss of life might have been prevented.

I am, Sir, &c.
GEORGE BEADON,
Commander, R.N.

*To the Secretary of the*
*Society of Arts.*

P.S. During the months of February and March last year, I felt no evil effects arising from repeated trials which I made in the water, in consequence of exerting myself whilst therein.

COMMANDER Beadon considers the present excellent buoy of Lieutenant Cooke, as now used in the British navy, deficient in two important points, viz. the one an effectual plan of preventing the buoy from rapidly drifting from the vessel, the other, means whereby a man may regain the ship when he has succeeded in mounting the buoy. It has been Commander Beadon's object in constructing the "Improved Life-buoy" to remedy both these defects.*

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* The first is partly effected by the deep keel, partly by the light staff being placed before the centre of motion, and partly by the wind acting against it, whereby it is caused to drift nearly "broad-side on."

Fig. 1 shews the buoy as it would appear when afloat.

Fig. 2, a longitudinal section of part of the main float, and

Fig. 3, the mode of suspending the buoy at the stern of the vessel, and of letting it go when required.

The buoy is a cylindrical tube A A, made either of copper or sheet zinc, eight feet in length, and twelve inches across at its greatest diameter, each end being tapered off to a point, and furnished with eye-bolts L M for the double purpose of attaching a rope, and of steadying it when suspended at the stern of the vessel by the eyes passing over guide-rods, one of which N is shewn in fig. 3; O O in the same figure being arms to support the blades of the oar. The buoy, when suspended at the

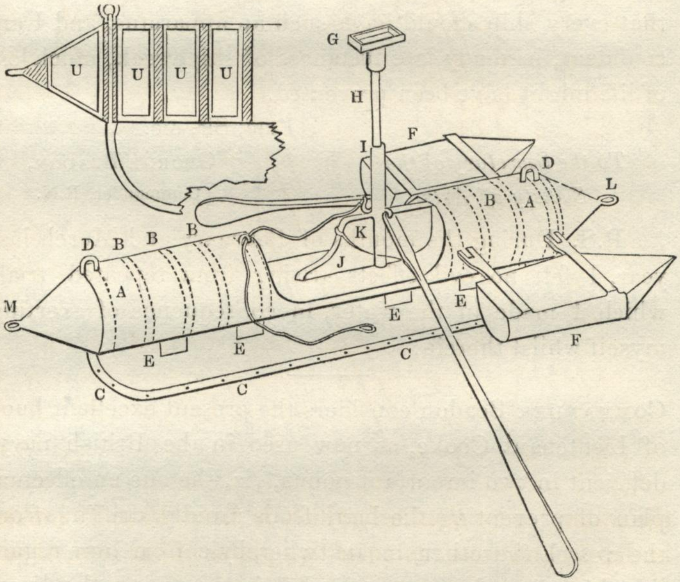
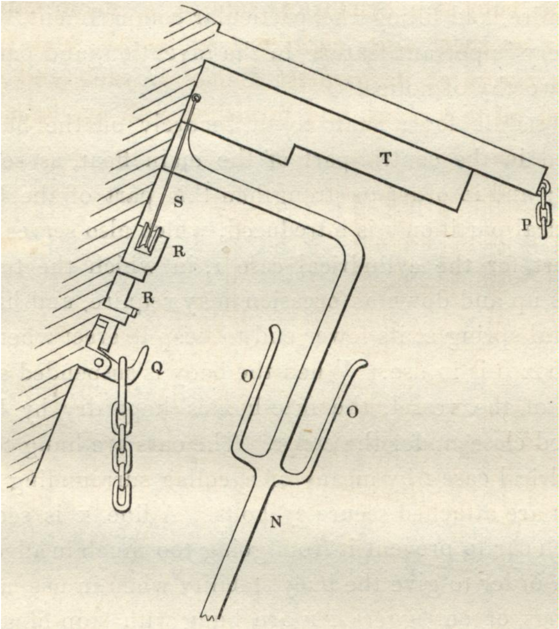


Fig. 1.
Fig. 2.

stern of the vessel, is kept in its place by a chain P passing round under it to the hook Q. The sliding bolt R R supports the hook Q. When it is required to lower the buoy, it is only necessary to raise the bolt by pulling the string S, the chain is released thereby, and the buoy drops into the water. C C C the keel, which is from 10 to 12 inches in depth, and constructed of two pieces of bar iron, about $\frac{7}{8}$ inch by $\frac{3}{4}$ inch in size, having sheet metal riveted between them, and which is secured to the main float A A by rivets passing through proper knees E E E. The ends of the iron binding of the keel C C C are turned up, and, passing through the cylindrical main float, are secured to the rings D D.

*Fig.* 3.



The main float is rendered stiffer and more secure by being divided into several compartments, which are separated from each other by wooden discs B B B, fig. 1. In these compartments are introduced metal drums or vessels U U U, so that, if by an accident to the outer casing of the buoy, leakage takes place, there is still the drum left entire, and filling the particular compartment. This is a very important feature in the invention, and particularly worthy of notice.

A saddle for a man to sit securely on the buoy is formed in the central part of the main float, as seen in fig. 1; and in order to strengthen this part of the buoy, a vertical partition J is introduced, which also serves as a support for the cylindrical case I, in which the tube H works up and down as occasion may require, and having a spiral spring at its lower end to keep it erect when the fuze-box G is in use. When the buoy is suspended at the stern of the vessel, the fuze-box is kept dry by being pressed close under the cap T. The oars are hung to the cylindrical case I by means of a collar surrounding it, to which are attached secure eyebolts. A line K is secured to each oar to prevent it from going too much in advance.

In order to give the buoy stability when in use, a pair of wings or outriggers F F are hung with stop-hinges to the fore-end of the main-float, which are secured by bolts passing into two of the wooden discs B B. The outriggers are formed of semi-cylindrical vessels having semi-conical fore-ends. The stop-hinges prevent them rising above the proper level, but when not in use they hang down close to the keel.